

**Amendment to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A circuit for determining the polarity of an on hook voltage between the tip and ring terminals of a telephone, said circuit comprising:

a charge storage device ~~for storing to store~~ charge for a first time period in response to a voltage presented across the tip and ring terminals of a telephone while said telephone is in the on hook state;

a switch ~~for causing to cause~~ the charge storage device to periodically discharge for a second time period, the second time period being less than the first ~~predetermined~~ time period; and

a latch ~~for capturing to capture~~ a reversal of polarity of said voltage.

2. (Currently Amended) The circuit of claim 1 wherein said first ~~predetermined~~ time period is approximately 2.5 ~~ms.~~ milliseconds and wherein said second ~~predetermined~~ time period is approximately 2 microseconds.

3. (Previously Presented) The circuit of claim 1 wherein the charge storage device is a capacitor and the discharge from said capacitor is used to generate current through an optocoupler.

4. (Previously Presented) The circuit of claim 1 wherein said latch comprises at least one flip flop.

5. (Previously Presented) The circuit of claim 1 comprising two of said latches, two of said charge storage devices, and two of said optocouplers, one of each of the foregoing elements being arranged to detect positive voltage changes, and one of each of the foregoing being arranged to detect negative voltage changes.

6. (Currently Amended) A method of detecting polarity changes in a voltage present across the tip and ring terminals of a telephone network, the method comprising:

repeatedly charging, for a **predetermined** first period, a charge storage device with the voltage presented across the tip and ring **interface terminals**;

periodically discharging the stored charge for a **predetermined** second period;  
latching information conveyed by the discharge **in-order** to ascertain data conveyed by a change in polarity of the voltage presented across the tip and ring **terminals**.

7. (Currently Amended) The method of claim 6 wherein said **predetermined** second period is shorter than said **predetermined** first period.

8. (Currently Amended) The method of claim 7 wherein the **predetermined** first period is approximately 3 milliseconds and the **predetermined** second period is approximately **2 milliseconds microseconds**.

9. (Currently Amended) ~~Apparatus for detecting~~ An apparatus to detect information conveyed by changes in polarity of a signal, said apparatus comprising:

means for periodically charging a capacitor for a first **predetermined** time period,

means for periodically discharging said capacitor for a second **predetermined** time period,

means for driving a current through an optical coupler in response to said discharge, and

a latch configured to measure an electrical signal produced by said discharge, and to latch that state for later use in decoding information.

10. (Currently Amended) ~~Apparatus~~ The apparatus of claim 9 wherein said capacitor is approximately 500 picofarads.

11. (Currently Amended) ~~Apparatus~~ The apparatus of claim 10 wherein said first and second **predetermined** time periods are 3 milliseconds and 2 microseconds respectively.

12. (Currently Amended) ~~Apparatus~~ The apparatus of claim 10 connected to tip and ring terminals of a telephone network.

13. (Currently Amended) ~~Apparatus~~ The apparatus of claim 12 further comprising at least one zener diode connected between said tip and ring terminals.

14. (Currently Amended) **Apparatus** The apparatus of claim 10 further comprising an OR logic gate connected to a signal input to said latch ~~for indicating to indicate~~ when said signal is valid.

15. (Currently Amended) **Apparatus** The apparatus of claim 14 wherein said optical coupler is connected in series with a resistor.

16. (Currently Amended) **Apparatus** The apparatus of claim 15 wherein the resistor is approximately 10 kilo ohm